



SEQUENCE LISTING

<110> Aventis Pasteur Limited

<120> Chlamydia antigens and corresponding DNA fragments and uses thereof

<130> 77813-6

10 <140> PCT/CA99/01224

<141> 1999-12-22

<150> US 60/114,060

<151> 1998-12-28

<150> US 60/123,967

<151> 1999-03-12

20 <150> US 60/141,271

<151> 1999-06-30

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<170> PatentIn Ver. 2.0

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Met Thr
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40 aaa acc gaa gaa aaa cct ttt gga aaa ttg cgc tct ttc ttg tgg ccg 104
Lys Thr Glu Glu Lys Pro Phe Gly Lys Leu Arg Ser Phe Leu Trp Pro
5 10 15

ata cat act cac gag cta aag aaa gtt ctg cca atg ttc cta atg ttc 152
Ile His Thr His Glu Leu Lys Lys Val Leu Pro Met Phe Leu Met Phe
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50 ttc tgt att aca ttt aac tat acg gtg tta cgc gat aca aaa gac act 200
Phe Cys Ile Thr Phe Asn Tyr Thr Val Leu Arg Asp Thr Lys Asp Thr
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ctt att gtg gga gct cct ggt tct ggt gca gag gca ata cct ttc atc 248
Leu Ile Val Gly Ala Pro Gly Ser Gly Ala Glu Ala Ile Pro Phe Ile
55 60 65

| | | |
|----|---|-----|
| | aag ttt tgg ctt gtt gtc ccc tgt gct att atc ttt atg ctt att tat | 296 |
| | Lys Phe Trp Leu Val Val Pro Cys Ala Ile Ile Phe Met Leu Ile Tyr | |
| | 70 75 80 | |
| | gca aag cta agt aat att tta agt aag cag gcc tta ttt tat gca gtg | 344 |
| | Ala Lys Leu Ser Asn Ile Leu Ser Lys Gln Ala Leu Phe Tyr Ala Val | |
| | 85 90 95 | |
| 10 | gga acg ccc ttt tta att ttc ttt gcc ctg ttc ccg act gta att tat | 392 |
| | Gly Thr Pro Phe Leu Ile Phe Phe Ala Leu Phe Pro Thr Val Ile Tyr | |
| | 100 105 110 | |
| | ccg cta cgc gat gtt tta cat cct aca gaa ttt gct gac cgt tta cag | 440 |
| | Pro Leu Arg Asp Val Leu His Pro Thr Glu Phe Ala Asp Arg Leu Gln | |
| | 115 120 125 130 | |
| | gcc atc cta cct cca gga ttg cta gga ctc gtt gcc atc tta aga aac | 488 |
| | Ala Ile Leu Pro Pro Gly Leu Leu Gly Leu Val Ala Ile Leu Arg Asn | |
| | 135 140 145 | |
| 20 | tgg aca ttt gct gca ttt tat gta ctt gct gaa cta tgg gga agc gtc | 536 |
| | Trp Thr Phe Ala Ala Phe Tyr Val Leu Ala Glu Leu Trp Gly Ser Val | |
| | 150 155 160 | |
| | atg cta tct cta atg ttc tgg gga ttt gct aat gaa att aca aaa atc | 584 |
| | Met Leu Ser Leu Met Phe Trp Gly Phe Ala Asn Glu Ile Thr Lys Ile | |
| | 165 170 175 | |
| 30 | cac gaa gca aag cgt ttc tac gct ctt ttc ggt atc gga gct aat att | 632 |
| | His Glu Ala Lys Arg Phe Tyr Ala Leu Phe Gly Ile Gly Ala Asn Ile | |
| | 180 185 190 | |
| | tct tta cta gct tct ggt cgt gca att gtt tgg gct tca aag ttg aga | 680 |
| | Ser Leu Leu Ala Ser Gly Arg Ala Ile Val Trp Ala Ser Lys Leu Arg | |
| | 195 200 205 210 | |
| | gct tcc gtt tct gaa ggt gta gat cct tgg gga att tct tta cgt ctt | 728 |
| | Ala Ser Val Ser Glu Gly Val Asp Pro Trp Gly Ile Ser Leu Arg Leu | |
| | 215 220 225 | |
| 40 | ttg atg gct atg act att gta tct gga ctt gtt ctt atg gcc agt tac | 776 |
| | Leu Met Ala Met Thr Ile Val Ser Gly Leu Val Leu Met Ala Ser Tyr | |
| | 230 235 240 | |
| | tgg tgg atc aat aag aac gta ttg acc gat cct cgc ttc tat aat cca | 824 |
| | Trp Trp Ile Asn Lys Asn Val Leu Thr Asp Pro Arg Phe Tyr Asn Pro | |
| | 245 250 255 | |
| 50 | gaa gaa atg caa aag ggg aaa aaa ggt gct aaa cct aaa atg aat atg | 872 |
| | Glu Glu Met Gln Lys Gly Lys Lys Gly Ala Lys Pro Lys Met Asn Met | |
| | 260 265 270 | |
| | aaa gat agc ttc ctc tat ctt gat aga tct cct tat att ctt tta tta | 920 |
| | Lys Asp Ser Phe Leu Tyr Leu Asp Arg Ser Pro Tyr Ile Leu Leu Leu | |
| | 275 280 285 290 | |

| | | | | | | | | | | | | | | | | | |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| | act | ctc | ttg | gtt | att | gcc | tat | ggt | att | tgc | att | aac | tta | atc | gaa | gtg | 968 |
| | Thr | Leu | Leu | Val | Ile | Ala | Tyr | Gly | Ile | Cys | Ile | Asn | Leu | Ile | Glu | Val | |
| | | | | | 295 | | | | | 300 | | | | | 305 | | |
| | act | tgg | aaa | agt | cag | ctg | aaa | ctg | caa | tat | cct | aat | atg | aat | gac | tat | 1016 |
| | Thr | Trp | Lys | Ser | Gln | Leu | Lys | Leu | Gln | Tyr | Pro | Asn | Met | Asn | Asp | Tyr | |
| | | | | 310 | | | | | 315 | | | | | 320 | | | |
| 10 | agt | gag | ttc | atg | ggg | aac | ttc | tcc | ttc | tgg | act | ggc | gta | gta | tcc | gta | 1064 |
| | Ser | Glu | Phe | Met | Gly | Asn | Phe | Ser | Phe | Trp | Thr | Gly | Val | Val | Ser | Val | |
| | | | 325 | | | | | 330 | | | | | 335 | | | | |
| | ctt | atc | atg | cta | ttt | gtt | ggt | ggt | aac | gtc | att | cgt | aaa | ttt | gga | tgg | 1112 |
| | Leu | Ile | Met | Leu | Phe | Val | Gly | Gly | Asn | Val | Ile | Arg | Lys | Phe | Gly | Trp | |
| | | | 340 | | | | 345 | | | | | 350 | | | | | |
| 20 | tta | act | gga | gcc | cta | gtc | act | cct | gtc | atg | gtt | ctc | cta | aca | ggt | atc | 1160 |
| | Leu | Thr | Gly | Ala | Leu | Val | Thr | Pro | Val | Met | Val | Leu | Leu | Thr | Gly | Ile | |
| | 355 | | | | | 360 | | | | | 365 | | | | 370 | | |
| | gtt | ttc | ttc | gct | ctt | gtt | atc | ttt | aga | aac | caa | gct | tct | ggg | ctg | gtc | 1208 |
| | Val | Phe | Phe | Ala | Leu | Val | Ile | Phe | Arg | Asn | Gln | Ala | Ser | Gly | Leu | Val | |
| | | | | | 375 | | | | | 380 | | | | 385 | | | |
| | gct | atg | ttc | ggt | aca | act | cct | ctc | atg | cta | gct | gtg | gtt | gtc | gga | gct | 1256 |
| | Ala | Met | Phe | Gly | Thr | Thr | Pro | Leu | Met | Leu | Ala | Val | Val | Val | Gly | Ala | |
| | | | | 390 | | | | | 395 | | | | | 400 | | | |
| 30 | ata | cag | aat | att | ctt | tcg | aaa | tcc | aca | aaa | tac | gct | ctc | ttt | gac | tca | 1304 |
| | Ile | Gln | Asn | Ile | Leu | Ser | Lys | Ser | Thr | Lys | Tyr | Ala | Leu | Phe | Asp | Ser | |
| | | | 405 | | | | | 410 | | | | | 415 | | | | |
| | act | aaa | gaa | atg | gcc | tat | atc | cct | ctt | gac | caa | gag | caa | aaa | gtc | aaa | 1352 |
| | Thr | Lys | Glu | Met | Ala | Tyr | Ile | Pro | Leu | Asp | Gln | Glu | Gln | Lys | Val | Lys | |
| | | 420 | | | | | 425 | | | | | 430 | | | | | |
| 40 | ggt | aag | gct | gct | att | gat | gta | gtt | gcc | gcc | cgc | ttc | gga | aaa | tca | gga | 1400 |
| | Gly | Lys | Ala | Ala | Ile | Asp | Val | Val | Ala | Ala | Arg | Phe | Gly | Lys | Ser | Gly | |
| | 435 | | | | | 440 | | | | | 445 | | | | 450 | | |
| | gga | gct | tta | atc | caa | caa | ggt | ttg | ctc | gtt | atc | tgt | gga | agt | att | gga | 1448 |
| | Gly | Ala | Leu | Ile | Gln | Gln | Gly | Leu | Leu | Val | Ile | Cys | Gly | Ser | Ile | Gly | |
| | | | | | 455 | | | | | 460 | | | | | 465 | | |
| | gct | atg | acc | cct | tat | ctt | gca | gtg | att | ctt | ctt | ttc | atc | att | gct | att | 1496 |
| | Ala | Met | Thr | Pro | Tyr | Leu | Ala | Val | Ile | Leu | Leu | Phe | Ile | Ile | Ala | Ile | |
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| 50 | tgg | ttg | gtt | tct | gca | act | aag | tta | aac | aaa | cta | ttc | tta | gcg | cag | tct | 1544 |
| | Trp | Leu | Val | Ser | Ala | Thr | Lys | Leu | Asn | Lys | Leu | Phe | Leu | Ala | Gln | Ser | |
| | | | 485 | | | | | 490 | | | | | 495 | | | | |
| | gct | ctt | aaa | gaa | caa | gaa | gtg | gct | caa | gaa | gat | tca | gct | cct | gct | tct | 1592 |
| | Ala | Leu | Lys | Glu | Gln | Glu | Val | Ala | Gln | Glu | Asp | Ser | Ala | Pro | Ala | Ser | |
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1637

Ser

515

<210> 2

<211> 515

<212> PRT

<213> Chlamydia pneumoniae

10

<400> 2

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| Met | Thr | Lys | Thr | Glu | Glu | Lys | Pro | Phe | Gly | Lys | Leu | Arg | Ser | Phe | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Pro | Ile | His | Thr | His | Glu | Leu | Lys | Lys | Val | Leu | Pro | Met | Phe | Leu |
| | | | 20 | | | | | 25 | | | | | 30 | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Phe | Phe | Cys | Ile | Thr | Phe | Asn | Tyr | Thr | Val | Leu | Arg | Asp | Thr | Lys |
| | | 35 | | | | | 40 | | | | | 45 | | | |

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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Thr | Leu | Ile | Val | Gly | Ala | Pro | Gly | Ser | Gly | Ala | Glu | Ala | Ile | Pro |
| | 50 | | | | | 55 | | | | | 60 | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Ile | Lys | Phe | Trp | Leu | Val | Val | Pro | Cys | Ala | Ile | Ile | Phe | Met | Leu |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Tyr | Ala | Lys | Leu | Ser | Asn | Ile | Leu | Ser | Lys | Gln | Ala | Leu | Phe | Tyr |
| | | | | 85 | | | | | 90 | | | | | 95 | |

30

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Val | Gly | Thr | Pro | Phe | Leu | Ile | Phe | Phe | Ala | Leu | Phe | Pro | Thr | Val |
| | | | 100 | | | | | 105 | | | | | 110 | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Tyr | Pro | Leu | Arg | Asp | Val | Leu | His | Pro | Thr | Glu | Phe | Ala | Asp | Arg |
| | | 115 | | | | | 120 | | | | | 125 | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Gln | Ala | Ile | Leu | Pro | Pro | Gly | Leu | Leu | Gly | Leu | Val | Ala | Ile | Leu |
| | 130 | | | | | 135 | | | | | 140 | | | | |

40

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Asn | Trp | Thr | Phe | Ala | Ala | Phe | Tyr | Val | Leu | Ala | Glu | Leu | Trp | Gly |
| 145 | | | | 150 | | | | | | 155 | | | | | 160 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Val | Met | Leu | Ser | Leu | Met | Phe | Trp | Gly | Phe | Ala | Asn | Glu | Ile | Thr |
| | | | 165 | | | | | | 170 | | | | | 175 | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Ile | His | Glu | Ala | Lys | Arg | Phe | Tyr | Ala | Leu | Phe | Gly | Ile | Gly | Ala |
| | | 180 | | | | | 185 | | | | | | 190 | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ile | Ser | Leu | Leu | Ala | Ser | Gly | Arg | Ala | Ile | Val | Trp | Ala | Ser | Lys |
| | | 195 | | | | | 200 | | | | | 205 | | | |

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| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Arg | Ala | Ser | Val | Ser | Glu | Gly | Val | Asp | Pro | Trp | Gly | Ile | Ser | Leu |
| | 210 | | | | | 215 | | | | | 220 | | | | |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Arg | Leu | Leu | Met | Ala | Met | Thr | Ile | Val | Ser | Gly | Leu | Val | Leu | Met | Ala |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Tyr | Trp | Trp | Ile | Asn | Lys | Asn | Val | Leu | Thr | Asp | Pro | Arg | Phe | Tyr |
| | | | | 245 | | | | | 250 | | | | | 255 | |

| | | | | | | | | | | | | | | | | | |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| | Asn | Pro | Glu | Glu | Met | Gln | Lys | Gly | Lys | Lys | Gly | Ala | Lys | Pro | Lys | Met | |
| | | | | 260 | | | | | 265 | | | | | 270 | | | |
| | Asn | Met | Lys | Asp | Ser | Phe | Leu | Tyr | Leu | Asp | Arg | Ser | Pro | Tyr | Ile | Leu | |
| | | | 275 | | | | | 280 | | | | | 285 | | | | |
| | Leu | Leu | Thr | Leu | Leu | Val | Ile | Ala | Tyr | Gly | Ile | Cys | Ile | Asn | Leu | Ile | |
| | | | 290 | | | | 295 | | | | | 300 | | | | | |
| 10 | Glu | Val | Thr | Trp | Lys | Ser | Gln | Leu | Lys | Leu | Gln | Tyr | Pro | Asn | Met | Asn | |
| | | | | | | 310 | | | | | 315 | | | | | 320 | |
| | Asp | Tyr | Ser | Glu | Phe | Met | Gly | Asn | Phe | Ser | Phe | Trp | Thr | Gly | Val | Val | |
| | | | | | 325 | | | | | 330 | | | | | 335 | | |
| | Ser | Val | Leu | Ile | Met | Leu | Phe | Val | Gly | Gly | Asn | Val | Ile | Arg | Lys | Phe | |
| | | | | 340 | | | | | 345 | | | | | 350 | | | |
| 20 | Gly | Trp | Leu | Thr | Gly | Ala | Leu | Val | Thr | Pro | Val | Met | Val | Leu | Leu | Thr | |
| | | | 355 | | | | | 360 | | | | | 365 | | | | |
| | Gly | Ile | Val | Phe | Phe | Ala | Leu | Val | Ile | Phe | Arg | Asn | Gln | Ala | Ser | Gly | |
| | | | 370 | | | | 375 | | | | | 380 | | | | | |
| | Leu | Val | Ala | Met | Phe | Gly | Thr | Thr | Pro | Leu | Met | Leu | Ala | Val | Val | Val | |
| | | | 385 | | | 390 | | | | | 395 | | | | | 400 | |
| 30 | Gly | Ala | Ile | Gln | Asn | Ile | Leu | Ser | Lys | Ser | Thr | Lys | Tyr | Ala | Leu | Phe | |
| | | | | | 405 | | | | | 410 | | | | | 415 | | |
| | Asp | Ser | Thr | Lys | Glu | Met | Ala | Tyr | Ile | Pro | Leu | Asp | Gln | Glu | Gln | Lys | |
| | | | | 420 | | | | | 425 | | | | | 430 | | | |
| | Val | Lys | Gly | Lys | Ala | Ala | Ile | Asp | Val | Val | Ala | Ala | Arg | Phe | Gly | Lys | |
| | | | 435 | | | | 440 | | | | | | 445 | | | | |
| | Ser | Gly | Gly | Ala | Leu | Ile | Gln | Gln | Gly | Leu | Leu | Val | Ile | Cys | Gly | Ser | |
| | | | 450 | | | | 455 | | | | | 460 | | | | | |
| 40 | Ile | Gly | Ala | Met | Thr | Pro | Tyr | Leu | Ala | Val | Ile | Leu | Leu | Phe | Ile | Ile | |
| | | | | | | 470 | | | | | 475 | | | | | 480 | |
| | Ala | Ile | Trp | Leu | Val | Ser | Ala | Thr | Lys | Leu | Asn | Lys | Leu | Phe | Leu | Ala | |
| | | | | | 485 | | | | | 490 | | | | | 495 | | |
| | Gln | Ser | Ala | Leu | Lys | Glu | Gln | Glu | Val | Ala | Gln | Glu | Asp | Ser | Ala | Pro | |
| | | | | 500 | | | | | 505 | | | | | 510 | | | |
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29